REMARKS

Claims 1-31 are pending in the Application and all have been rejected in the Office action mailed September 21, 2006. Claims 1 is amended in this response. Claims 1, 11, 21 and 31 are independent claims. Claims 2-10, 12-20, and 22-30 depend, respectively, from independent claims 1, 11 and 21, respectively.

The Applicants respectfully request reconsideration of the pending claims 1-31, in light of the following remarks.

Rejections of Claims

Rejections Under 35 U.S.C. §112

Claims 1-10 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant respectfully traverses the rejection. Notwithstanding, Applicant has amended claim 1 to more clearly define the claimed subject matter, and believes that claim 1 as amended is in accordance with 35 U.S.C. §112, second paragraph, and that the rejection of claims 1-10 under 35 U.S.C. §112, second paragraph, is overcome. Applicant respectfully submits that claims 2-10 depend either directly or indirectly from amended claim 1, and that the rejection of claims 2-10 under 35 U.S.C. §112, second paragraph, is also overcome. Applicants respectfully request, therefore, that the rejection of claims 1-10 under 35 U.S.C. §112, second paragraph, be withdrawn.

Rejections Under 35 U.S.C. §102

Claims 1-31 were rejected under 35 U.S.C. §102(e) as being anticipated by O'Neill (US 6,832,373). The Applicants respectfully traverse the rejection. Notwithstanding, Applicant has amended claim 1 to more clearly define the claimed subject matter.

With regard to the anticipation rejections, MPEP 2131 states, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 2 USPQ2d 1051, 1053 (Fed.Cir. 1987). MPEP 2131 also states, "[t]he identical

invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

With regard to claims 1 and 11, the Office action alleges at page 3, lines 9-13, that the teachings of O'Neill found in "...Figure 13, element 1512 'MAKE NEXT BANK CURRENT BANK' and Figure 6C, element 524 and 622 and related text..." disclose "...shifting the contents of each bank in the bank order to the next bank in the bank order beginning with the penultimate bank in the bank order, and proceeding in descending bank order until the contents of the first bank in the bank order has been shifted to the second bank in the bank order...", as recited in Applicant's claim 1; and "...shifting the contents of each of the plurality of banks other than the designated bank from an original bank to an unoccupied bank in a bank by bank fashion, each original bank thereby temporarily becoming an unoccupied bank;...", as recited in Applicant's claim 11. Applicant respectfully disagrees.

Applicant respectfully submits that element 1512 of Figure 13 of O'Neill simply states 'MAKE NEXT BANK CURRENT BANK', and makes no mention of shifting the contents of anything. According to O'Neill, column 37, lines 16-40:

> "In state 1312, the update agent checks the bank identity information from the uncompressed update package and finds out where the update process was terminated and should be resumed. The reader is now directed to FIG. 13, that shows a block diagram illustrating an exemplary method 1500 of determining the next bank to be updated, that may correspond to the actions of state 1312 of FIG. 110 in accordance with an embodiment of the present invention. The point at which to resume the update process is found, for example, by comparing size and CRC information from bank identity information with the existing and updated bank information calculated from the physical banks inside the electronic device (state 1508). In one aspect, the process determines the appropriate resume point by comparing the bank size and CRC information. Proceeding sequentially from the beginning of the update package instruction set (states 1502, 1504, 1506, 1508, 1510, 1512), a bank which does not match the expected size and CRC information, is the first bank to be updated (states 1514, 1516) Additionally, if the update process is interrupted during a bank copy function, for example when copying updated bank information back into the existing bank of non-volatile

> memory 1002, and the size and/or CRC information does not match the expected values then the backup bank may be used to recover the last updated bank." (underline added)

Applicant respectfully submits that the above text of O'Neill, which describes Figure 13 in detail, makes no mention of the shifting of anything, and fails to teach or suggest "...shifting the contents of each bank in the bank order to the next bank in the bank order beginning with the penultimate bank in the bank order...", as recited in Applicant's claim 1, and "...shifting the contents of each of the plurality of banks other than the designated bank from an original bank to an unoccupied bank in a bank by bank fashion, each original bank thereby temporarily becoming an unoccupied bank;...", as recited in Applicant's claim 11.

In addition, Applicant respectfully submits that Figure 6C, elements 524 and 622 (Applicant notes that Figure 6C does not contain an element 622, therefore Applicant assumes that element 522 was intended) of O'Neill, and related text, also fails to teach or suggest, among other things, "...shifting the contents of each bank in the bank order to the next bank in the bank order beginning with the penultimate bank in the bank order...", as recited in Applicant's claim 1, and "...shifting the contents of each of the plurality of banks other than the designated bank from an original bank to an unoccupied bank in a bank by bank fashion, each original bank thereby temporarily becoming an unoccupied bank;...", as recited in Applicant's claim 11. According to O'Neill, column 23, lines 38-53:

> "FIG. 6C illustrates one embodiment of a copy from address or hash (HSH) instruction 520. A first word sequence 522 representative of a digital information sequence from the first code version 106, and a second word sequence 524 representative of a digital information sequence from the second code version 108 is shown by way of example. If the first word sequence 522 that starts at a particular position of the digital information sequence at an address 526, such as in this case address "b", from the first version 106 of operational software code is the same or significantly identical to the second word sequence 524 that starts at a different position of digital information sequence from the second version 108 of operational software code, then the HSH instruction 520 may be

used for a specified word length (N) 528, such as in this case N=6, to reflect the update package digital information sequence."

Applicant respectfully submits that again, the cited teachings of O'Neill make no mention of shifting, let alone "...shifting the contents of each bank in the bank order to the next bank in the bank order beginning with the penultimate bank in the bank order...", as recited in Applicant's claim 1, or "...shifting the contents of each of the plurality of banks other than the designated bank from an original bank to an unoccupied bank in a bank by bank fashion, each original bank thereby temporarily becoming an unoccupied bank;...", as recited in Applicant's claim 11.

Based at least upon the above, Applicants respectfully submit that the Office action has failed to show where O'Neill teaches or suggests each and every element as set forth in claims 1 and 11, as required by M.P.E.P. §2131.

With regard to claim 21, the Office action alleges at page 7, lines 3-10, that the teachings of O'Neill found in "...(col. 32, lines 42-49 "...bank transfer..." col. 32, lines 59-65 "...the contents of the working bank are copied into the backup bank location...");..." disclose "...transferring the contents of the first bank to the second bank...", as recited in Applicant's claim 21. Applicant respectfully disagrees.

Applicant respectfully submits that the "first bank" and "second bank" recited in Applicant's claim 21 are in non-volatile memory, and contain a first code version. According to O'Neill, column 32, lines 42-57:

"Following completion of the pointer initialization in state 1120 the process 1100 continues with a series of bank update operations 1123 commencing in a bank transfer state 1125 where a section of the original code version that resides in the non-volatile memory or storage area 1002 is transferred to the working bank in the volatile memory area 1004. The code section copied from the original code version corresponds to a bank of information specified by the instruction set which will be desirably operated upon to-generate the new code version for that particular bank of information. The process 1100 then proceeds to

> an apply update instruction state 1130 where the appropriate instruction from the instruction set is executed to modify the working bank of information in such a manner that the old code version contained in the bank is transformed into the new code version."
> (underline added)

Applicant respectfully submits that the above text of O'Neill, which includes the teachings cited by the Office action, fails to teach or suggest the transfer of the contents of a first bank in non-volatile memory to a second bank in non-volatile memory. Instead, the cited text of O'Neill clearly teaches the transfer of code from non-volatile memory to a working bank in volatile memory.

Continuing with respect to claim 21, according to O'Neill, column 32, line 58 to col. 33, line 2:

> "Once the appropriate instructions have been executed and the corresponding code updated in the volatile working bank, the process proceeds to a bank backup state 1135 where the contents of the working bank are copied into the backup bank located in the non-volatile memory or storage area 1002. Subsequently, the code in the volatile working bank is copied to the appropriate location corresponding to the bank where the original code was obtained from in an update bank state 1140. Upon completion of bank copy in slate 1140, the process 1100 proceeds to an new state 1145 where the bank pointer is incremented to the next consecutive bank that is to be updated."
> (underline added)

Applicant respectfully submits that the above text of O'Neill, which includes the teachings cited in the Office action, clearly teaches the transfer not of a first version of code from non-volatile memory, as recited in Applicant's claim 21, but of updated code from the working bank in volatile memory to a backup bank in non-volatile memory.

Thus, Applicant respectfully submits that the teachings of O'Neill cited in the Office action fail to teach or disclose "...transferring the contents of the first bank to the second bank...", as recited in Applicant's claim 21.

Based at least upon the above, Applicants respectfully submit that the Office action has failed to show where O'Neill teaches or suggests each and every element as set forth in claim 21, as required by M.P.E.P. §2131.

With regard to claim 31, the Office action alleges at page 8, line 22 to page 9, line 4 that the teachings of O'Neill found in "...(e.g., Figure 8A and related text)..." and "...(col. 44, lines 1-5..." disclose "...[a] method of updating an electronic device from a first code version to a second code version, the electronic device having a non-volatile memory comprising a plurality of banks containing the first code version, the method comprising converting the first code version to the second code version in a fault tolerant manner, wherein the method requires only two writes to each bank being updated....", as recited in Applicant's claim 31. Applicant respectfully disagrees.

Applicant respectfully submits that Figure 8A of O'Neill simply illustrates one embodiment of a memory or storage architecture for a portable electronic device to be used in conjunction with an update management system, and does not teach or suggest, for example, "...converting the first code version to the second code version in a fault tolerant manner, wherein the method requires only two writes to each bank being updated....", as recited in Applicant's claim 31. According to O'Neill, col. 25, line42 to col. 27, line 56:

> "FIG. 8A illustrates one embodiment of the memory or storage architecture for a portable electronic device to be used in conjunction with the update management system. This architecture is representative of many conventional electronic devices including mobile phones, personal digital assistants, pagers, or other devices that are to be desirably updated using the update management system and methods.
>
> In one aspect, the architecture 1000 comprises a non-volatile memory or storage area 1002 and a volatile memory or storage area 1004. The non-volatile area 1002 is used by the electronic device to store information in a semi-

permanent state where the device may be powered down or turned off without loss of the information stored in this area 1002. The non-volatile area 1002 may be further logically subdivided to contain a code section 1006 and a data section 1008. The code section 1006 is responsible for storing information such as the system operating software or firmware code that provides the functionality for device operation. The data section 1008 stores non-essential or user-derived information or other information that may be desirably re-written or changed as necessary. In a typical mobile phone, the data section 1008 may contain information including phone numbers, addresses, or personal memos that are saved so that they may be retrieved when needed or desired without loss due to powering down of the electronic device.

Both the code and data sections 1006,1008 may be accessed and written to throughout the update process to modify existing code stored therein. The data section 1008 also provides an area of memory or storage space that may be used during the update process to store a copy of the update package 110 when it is received by the client. Furthermore, the data section 1008 may store information during the update to provide a degree of fault tolerance should the update operation be interrupted. Details of the fault-tolerant aspects of the update process will be described in greater detail in connection with FIGS. 9 and 10.

While the non-volatile memory or storage area is illustrated as having separate code and data sections, it will be appreciated that the update methods presented herein can readily be adapted to other memory or storage configurations. For example, the non-volatile storage area 1002 may comprise a hardware storage device such as a disk drive, optical drive, or other device implementation which may be used to store information in a non-volatile manner. Additionally, in the case of the non-volatile memory storage area, the memory configuration need not be logically subdivided into separate code and data sections in order to be used with the update management system and methods. It is conceived that the aforementioned memory or storage area configuration represents but one embodiment of an architecture that may be adapted for use with the present invention and other memory or storage areas architectures and

configurations can readily be adapted in a similar manner by one of skill in the art.

In one aspect, the architecture of the electronic device specifies that the non-volatile memory or storage area 1002 is partitioned or logically divided into a plurality of storage banks 1010. Each storage bank 1010 is representative of a discrete quantity or size of storage area and may be associated with a unique address 1012. Using the address 1012 as a reference, the storage banks 1010 may be individually referenced and the contents contained therein read from or written to as determined by the operating system or firmware of the electronic device. Alternatively, the contents of the storage banks 1010 may be accessed independently of the address 1012 by referring to the contents themselves wherein the contents of the banks 1010 are used as a reference to determine the present location within the non-volatile memory or storage area 1002. The storage banks 1010 are arranged in a contiguous manner with bank addresses 1012 that sequentially reference the storage banks 1010 in a predefined manner. For example, as shown in FIG. 8A, the storage banks 1010 of the non-volatile memory stores 1002 is allocated with a common size of 64 kilobytes (K). The storage banks 1010 are further arranged in a sequential manner with the first 64 K of the storage section 1002 being stored in BANK 0, the second 64 K of the storage section stored in BANK 1, and so forth. Additionally, a block address 1012 of "OA" is associated with BANK 0 of the non-volatile memory store 1002, "OB" associated with BANK 1, and so forth.

It will be appreciated by one of skill in the art that the division and arrangement of storage banks 1010 may vary from device to device and that the system and methods for update management described in connection with the non-volatile area 1002 having 64 K banks 1010 may be readily applied to other configurations. For example, the size of the storage banks may differ from one device to the next or more available memory or storage areas may be available. It is conceived that the present system and methods can be readily adapted to the different characteristics and combinations of the storage areas defined by the

architecture 1000 of the memory or storage elements for numerous different types of electronic devices.

In another aspect, the volatile memory or storage area 1004 of the electronic device is configured as a single continuous bank or storage section. Areas within the volatile memory or storage area 1004 can be individually accessed and space contained therein can be flexibly allocated as needed or desired. Like the non-volatile memory or storage area 1002, address information may be used to reference particular sections of the memory 1004, however, the somewhat rigid structure of the non-volatile memory defined by banks need not be adhered to.

It will be appreciated that the aforementioned memory or storage area banks need not be exclusively comprised of identical bank sizes. Instead, each bank may vary in size with respect to other banks within the electronic device. Additionally, the banks need not be physically or logically contiguous with one another and may be addressed using logical rather than physical addressing schemes. In one aspect, with the files or contents of a personal computer or other computing device may be may be addressed in a logical manner such as for example when using a hard drive having a logical addressing scheme with files stored therein.

Although the memory configuration described herein is representative of many conventional mobile or cellular phone storage architectures. It will be appreciated by one of skill in the art that there are numerous variations in the architecture or allocation of memory or storage areas to which the system and methods presented herein may be applied. Other memory configurations may exist for other electronic devices such as personal digital assistants, computers, satellites, and telematic devices which include not only non-volatile and volatile memory but also include other storage devices such as hard drives, optical media, and the like. Additionally, the memory architecture and allocation schema may vary from device to device, however, the system and methods described herein can readily be adapted to operate with these alternative configurations to represent but other embodiments of the present invention.

> In one embodiment the non-volatile memory or storage area 1002 may comprise numerous types or configurations of storage space that desirably maintain information through events such as power down, interruption, and device fault. Exemplary components that may be adapted to function as suitable non-volatile memory or storage area may include hard drives, optical drives, CD-writers, DVD-writers, tape drives, flash memory devices and EPROM devices. Likewise the volatile memory or storage area 1004 may comprise random access memory (RAM) or other volatile memory types. Alternatively, a non-volatile memory or storage area may be used instead of the volatile memory or storage area and serve similar functionality. Therefore, the aforementioned non-volatile memory or storage devices can be adapted to operate in the same manner as the volatile memory or storage area 1004 without departing from the scope of the invention."

Applicant respectfully submits that neither Figure 8A, nor the above text of O'Neill, which describes Figure 8A in detail, teaches or suggests "...converting the first code version to the second code version in a fault tolerant manner, wherein the method requires only two writes to each bank being updated....", as recited in Applicant's claim 31.

In addition, Applicant respectfully submits that col. 44, lines 1-5 of O'Neill, also fails to teach or suggest, among other things, "...converting the first code version to the second code version in a fault tolerant manner, wherein the method requires only two writes to each bank being updated....", as recited in Applicant's claim 31. According to O'Neill, col. 44, lines 1-5:

> "...the volatile memory comprises a working bank for converting the contents of each of the plurality of banks from a portion of a code to a portion of an updated code."

Thus, Applicant respectfully submits that the above teachings of O'Neill, cited in the Office action, fail to teach or disclose "...converting the first code version to the second code

version in a fault tolerant manner, wherein the method requires only two writes to each bank being updated", as recited in Applicant's claim 31. (underline added)

Based at least upon the above, Applicants respectfully submit that the Office action has failed to show where O'Neill teaches or suggests each and every element as set forth in claim 31, as required by M.P.E.P. §2131.

Therefore, Applicant respectfully submits that the Office action has failed to show where O'Neill teaches or suggests each and every element of Applicant's claims 1, 11, 21 and 31, as required by M.P.E.P. §2131, and that a rejection of claims 1, 11, 21 and 31 under 35 U.S.C. 102(e) cannot be maintained.

Based at least upon the above, Applicant believes that claims 1, 11, 21 and 31 are allowable over O'Neill. Applicant respectfully submits that claims 2-10, 12-20 and 22-30 depend either directly or indirectly from claims 1, 11 and 21, respectively. Because claims 2-10, 12-20 and 22-30 depend from allowable claims 1, 11 and 21, Applicant respectfully submits that claims 2-10, 12-20 and 22-30 are also allowable over O'Neill, for at least the reasons set forth above. Therefore, Applicants respectfully request that the rejection of claims 1-31 under 35 U.S.C. §102(e) be withdrawn.

Conclusion

In general, the Office action makes various statements regarding claims 1-31 and the cited reference that are now moot in light of the above. Thus, Applicant will not address such statements at the present time. However, Applicant expressly reserves the right to challenge such statements in the future should the need arise (e.g., if such statements should become relevant by appearing in a rejection of any current or future claim).

The Applicant believes that all of pending claims 1-31 are in condition for allowance. Should the Examiner disagree or have any questions regarding this submission, the Applicant invites the Examiner to telephone the undersigned at (312) 775-8000.

A Notice of Allowability is courteously solicited.

The Commissioner is hereby authorized to charge any additional fees required by this communication, or credit any overpayment, to Deposit Account No. 13-0017.

Respectfully submitted,

Dated: February 21, 2007

/Kevin E. Borg/
Kevin E. Borg
Reg. No. 51,486

McANDREWS, HELD & MALLOY, LTD.
500 West Madison Street
Suite 3400
Chicago, Illinois 60661
Phone (312) 775-8000
Facsimile (312) 775-8100